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The Winnipeg Injection Drug Epidemiology (W.I.D.E.) Study: A Study of the Epidemiology of Injection Drug Use and HIV Infection in Winnipeg, Manitoba

Final Report

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A Study of the Epidemiology of Injection Drug Use and

HIV Infection in Winnipeg, Manitoba

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EXECUTIVE SUMMARY

The Winnipeg Injection Drug Epidemiology (WIDE) Study is a cross-sectional survey of injection drug users (IDU) in Winnipeg, Manitoba, conducted in 1998. The study involved a screening questionnaire to identify persons with a history of injection drug use, and an in-depth interview and HIV test for consenting participants. The major findings of the study are as follows:

- The HIV infection prevalence among Winnipeg IDU has increased significantly over the last decade, from approximately 2.3% in the 1986-90 period, to approximately 12.6% in 1998.
- HIV infection prevalence was found to be higher in injection drug users who gave a history of ever sharing injection needles with someone else, in those who predominantly inject cocaine, and in those ever involved in the sex trade. The highest HIV positivity rates were found among male injection drug users, especially among those aged 25 to 29 years, and those who stated they had ever had sex with other men.
- Injection drug use has been well-established in Winnipeg for some time, with the median year of first injection being 1987. Cocaine is the drug injected by most users, with a decline in the use of Talwin/Ritalin in recent years. Heroin use is not currently prevalent in Winnipeg.
- Although the majority of injection drug users surveyed live in the core areas of Winnipeg, IDU in the study came from all areas of the city.
- There were nearly as many women IDU identified as men, in contrast to most population-based surveys of injection drug users, where a clear majority of IDU are men. The female IDU tended to be younger than the male IDU, and had initiated injecting more recently.
- A disproportionately high number of the surveyed IDU self-identified as Aboriginal (in comparison to the proportion of Aboriginal people living in Winnipeg). The male:female ratio among the Aboriginal IDU was approximately 1 to 1 compared to approximately a 2:1 ratio among non-Aboriginal IDU.

- In terms of socioeconomic determinants, the study found that overall, the Winnipeg IDU population is characterized by low education levels, low income, high unemployment, and unstable housing.
- Most IDU take steps to reduce the risk of HIV transmission during injection (e.g. 60% obtain new needles prior to obtaining drugs more than half the time). However, the study found a significant level of ongoing risky injection behaviour, including binge injection of drugs in the last year (53%), injecting with a needle used by someone else (42% in last year), and use of water alone rather than bleach mixtures to clean used needles (56% of those who clean used needles).
- IDU obtain new needles by purchasing them at pharmacies, accessing them free through needle exchange programs, or obtaining them from acquaintances. Approximately 30% of respondents cited difficulties in obtaining needles at least some of the time, due to lack of money to purchase, refusal by some pharmacies to sell needles to them, or needle exchange sites being inconveniently located or closed at times when needles were needed.
- There is ongoing risk of sexual transmission of HIV and other pathogens between IDU and their sexual partners, as reported condom usage during intercourse with regular sexual partners was very low (approximately 60% answered "never") and with casual partners was also low (approximately 30% answered "never"). Reported condom use with clients by female IDU involved in the sex trade was much higher (2% answered "never"). Male IDU paid for sex with other men reported variable condom use with clients (48% answered "always", 13% answered "never").
- Winnipeg IDU have frequent contact with the health care system, and most have been previously tested for HIV. However, most health care contacts are with walk-in clinics or hospital emergency rooms. While the majority of IDU have previously been referred for addictions treatment, only 22% reported being under treatment currently.

In summary, the documented increase in HIV prevalence in Winnipeg's injection drug using population, combined with evidence of ongoing risky injection and sexual

practices, is cause for concern. Experience in other large cities has demonstrated that once more than 10% of the drug-injecting population is infected with HIV, prevalence of infection may increase rapidly.[5,10]

The findings of this study have been shared with multiple stakeholders in this issue, including: the many health and social service agencies in Winnipeg providing services to injection drug users, public health officials at the regional, provincial and national levels, Aboriginal health leadership in Manitoba, and injection drug users themselves. The results of the study prompted the formation of the Winnipeg IDU Round Table, a forum for exchange and discussion of information and strategies for addressing the issue of HIV in injection drug users. Participants in the Round Table forum include representatives of many of the governmental and non-governmental agencies providing preventive, treatment and outreach services to IDU, as well as injection drug users themselves. Requests for further analysis of the study data have been submitted by various stakeholders, and proposals for more in-depth study of certain aspects of the IDU/HIV issue have been submitted to funders.

Based on the findings of this study, it is recommended that coordinated, comprehensive, multi-sectoral strategies be developed and implemented to prevent further extensive transmission of HIV and other bloodborne pathogens among IDU and their sexual partners in Winnipeg and the rest of Manitoba. These strategies should include culturally-appropriate policies and programs to prevent and treat injection drug addiction *and* reduce harmful health consequences among those who are unable or not ready to abstain from drug use. Such strategies have been developed by other communities facing the same issues, and much can be learned from those experiences.[5,11-16] Minimum components of comprehensive strategies should include:

- Accessible addictions treatment and support for users at various stages of readiness for treatment;
- Education, counselling and support to reduce the harms of drug use, with effective outreach programs to access marginalized drug users;
- Access to adequate supplies of sterile injection equipment and condoms at locations and times convenient to users;
- Access to comprehensive mental health and medical care for injection drug users, including testing and treatment for blood-borne infections such as HIV and hepatitis C; and
- Healthy public policy to address some of the social and environmental determinants which may predispose to injection drug use and its consequences, including poverty, inadequate housing, and restricted opportunities for education, employment and recreation.

Various programs and services for injection drug users are currently in place in Winnipeg and the rest of Manitoba, and it is recommended that these be evaluated and modified or expanded if necessary to meet the above objectives and the changing needs of the at-risk populations.

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INTRODUCTION

The epidemic of HIV infections in Canada continues to evolve. A key transition that has been seen in many jurisdictions is an increasing predominance of injection drug use (IDU) as an exposure category. Since 1995, it has been estimated that up to one half of all new HIV infections in Canada occurred among IDU.[1] While this trend appears to be widespread in Canada, it is also apparent that there are regional differences. For example, in Ontario, 10.1% of positive HIV tests in 1998 were among those reporting IDU compared to 38.5% in British Columbia.[2] Similar to British Columbia, in Manitoba in 1998 IDU was cited as the exposure category for 36.1% of all newly diagnosed HIV infections, surpassing men having sex with men.[2]

There is evidence from some IDU populations in Canada that the HIV prevalence has increased substantially in recent years. Among IDU in Montreal, the prevalence increased from 5% in 1988 to 19.7% in 1996.[3] Similarly, the prevalence among IDU in Vancouver increased from approximately 4% in 1992/93 to 23% in 1996/97.[4,5]

Although less data are available, it appears that HIV infection may be increasing among IDUs outside of the major urban centres in Canada. HIV prevalence among needle exchange program attenders has reached 8.8% in Quebec City and 18.7% in Ottawa.[6] Little is known with respect to the size and characteristics of IDU populations in most other mid-sized Canadian cities. Even less is known with respect to the status of the HIV epidemic in these populations. The only previous study of IDU in Winnipeg was conducted by Hammond et al. in the 1986-1990 period, and documented an HIV seroprevalence of 2.3% (95% confidence interval 0.5-6.7%) among IDU.[7] Since that study was completed, there has been anecdotal concern expressed by community health workers that injection drug use has increased in Winnipeg, and that the predominant drug

of choice has changed from Talwin/Ritalin to cocaine. Injection of cocaine has previously been associated with frequent injection, sharing of needles, and increased risk of HIV.[8] In 1995, there was an outbreak of hepatitis B and C among Winnipeg street-involved youth, many of whom were injection drug users.[9]

All of these considerations together formed the rationale for designing and conducting the Winnipeg Injection Drug Epidemiology (WIDE) Study in 1998. The following sections describe the methodology, results and conclusions of the study.

METHODOLOGY

I. Objectives

The following were the specific objectives of the WIDE Study:

1. To describe the IDU population in Winnipeg with regard to: residence, age, gender, ethnicity, socioeconomic characteristics.
2. To describe injection drug use activities including drug(s) of choice, injection practices, and harm reduction practices.
3. To describe sexual risk behaviours among the IDU population.
4. To describe the use of community health and preventive services by IDU in Winnipeg.
5. To estimate the prevalence of HIV infection among IDU, and characteristics or risk factors associated with HIV infection.

II. Study Advisory Committee

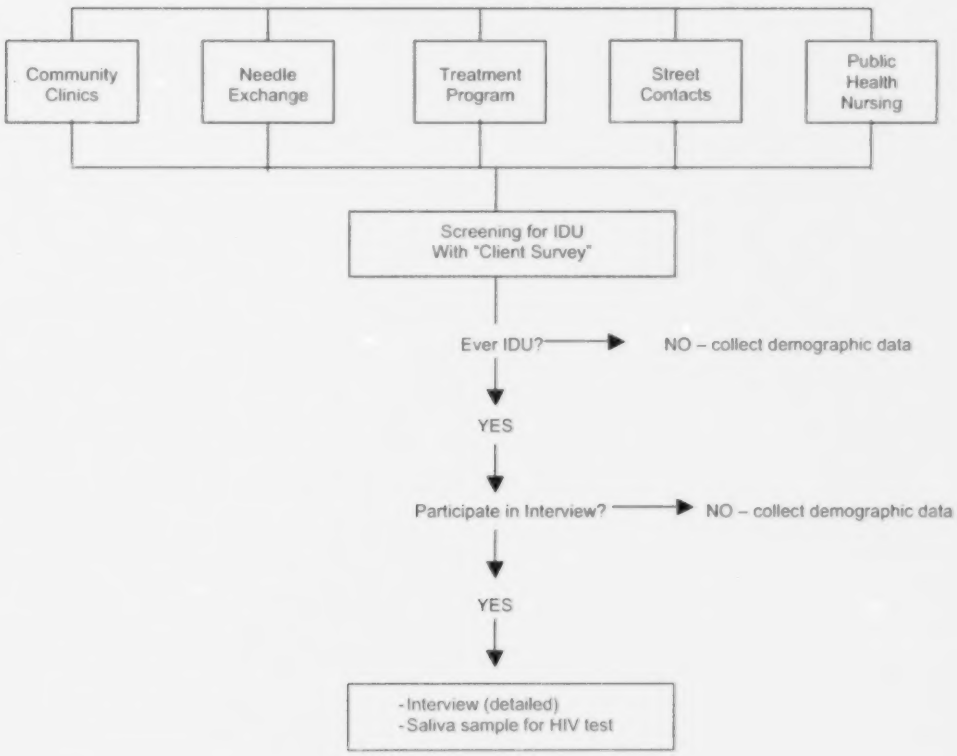
A Study Advisory Committee was created early in the project development phase. Representatives from over twenty agencies and community groups involved in providing services to Winnipeg injection drug users were invited to sit on the Advisory Committee. These partner agencies and community groups included: local public health agencies, addictions treatment agencies, Winnipeg's one needle exchange program ("Street Connections"), community health centres, hospital infectious disease clinics, AIDS service organizations, and private physicians providing addictions treatment. The members of the Advisory Committee steered the development of both the screening questionnaire (the "Client Survey") and the in-depth interview questionnaire, and subsequently guided all phases of study implementation and results communication. Information was exchanged

between study staff and Advisory Committee members at regular meetings of the Committee as well as during on-site visits to the various agencies by study staff.

III. Study Design and Subject Recruitment

The study was a cross-sectional survey consisting of a screening questionnaire to identify Winnipeg residents with a history of ever injecting drugs, and a standardized in-depth interview and saliva HIV test for those recruited to participate in the study. An overview of the study design and methodology is presented in **Figure 1: Methodology Overview.**

Figure 1: Study Methodology Overview



Multiple sources of participant recruitment were employed in this study. Much of the recruitment was done systematically through various referral sites. These referral sites are comprised of various facilities and agencies which provide community-based services to IDU, and can be categorized into four main categories: community clinics, needle exchange program, addictions and HIV treatment programs, and public health nursing. A list of the specific contact sites is provided in Appendix I. Each of these contact sites participated by conducting a brief screening questionnaire with their clients to identify those with a history of injection drug use. Those clients who indicated that they have ever injected drugs were informed of the study and provided with a card which briefly explained the study and how they could enroll. Potential participants could also self-refer to the study, having heard of the study by word-of-mouth ("street contacts") or having seen a poster advertising the study. The screening questionnaire was also administered to these participants who were not referred by one of the recruitment sites, and they were categorized as "unbased" for analysis purposes.

The completed screening questionnaires provided a sampling frame of eligible IDU against which the actual study enrollment can be compared. This comparison allowed for assessment and quantification of potential biases in the enrolled study population, by comparing demographic and other information against data from the screening questionnaires.

A sum of $20.00 was offered to those enrolled in the study as compensation for their time and any expenses incurred. Recruitment took place over a one-year period, from January through December, 1998.

IV. Data Collection and Management

i. Client Survey

The one page Client Survey screening questionnaire was developed through consultation with the study Advisory Committee, as well as members of the Bureau of HIV/AIDS, STD and TB at Health Canada's Laboratory Centre for Disease Control, and staff of the Public Health Branch of Manitoba Health. The variables on the survey collect the minimum data required to allow non-nominal individual identification of IDUs and to provide a brief client profile. The information collected by the screening questionnaire included the following information:

- 10 character alpha-numeric non-nominal identification code.
- Age, gender, self-identified ethnicity.
- Geographic location of residence (postal code).
- Injection drug use history (including recency of use).
- drug(s) of choice.

Completed surveys were forwarded to the main study site on a weekly basis.

ii. Interview Procedure and Interview Questionnaire

Eligible study participants included those who provided a history of ever having injected illicit drugs on the screening questionnaire, were 16 years of age or older, who temporarily or permanently resided in Winnipeg, and who were not obviously intoxicated or unable to provide appropriately informed consent. Following an orientation to the study and provision of informed consent, study interviews were conducted in closed rooms by trained interviewers.

A standardized Interview Questionnaire was used to collect detailed information on demographics, injection drug use and other HIV risk activities, and health service utilization. To provide comparability with research conducted elsewhere in Canada, the Interview Questionnaire was been adapted from the VIDUS Project questionnaire which was used in a study of injection drug use in Vancouver.[5] The original VIDUS questionnaire was reviewed by our study personnel and assessed regarding the length of the interview and the applicability of questions to the objectives of the current study. Prior to finalizing the Interview Questionnaire, focus group testing was conducted with IDUs.

iii. Data Entry and Management

All data were entered onto a microcomputer using a customized database management system. To maintain the anonymity of participants, all study data (i.e., screening questionnaire, interview questionnaire, saliva sample and result) were identified only by a unique study code. This code is an alpha-numeric variable (10 characters) consisting of the first two letters of the first name, last two letters of the last name, year of birth, day of birth, gender, study site code (e.g., JOTH6831MA). Hard copies of questionnaires were stored in locked cabinets in the central study office. Data stored on computer is password protected.

Data checking, cleaning and descriptive analysis were performed using SAS (v.6.12, SAS Institute, Cary, NC). Logistic regression analyses were performed using Stata Statistical Software (Release 5.0, StataCorp, College Station, TX).

V. Laboratory Methods

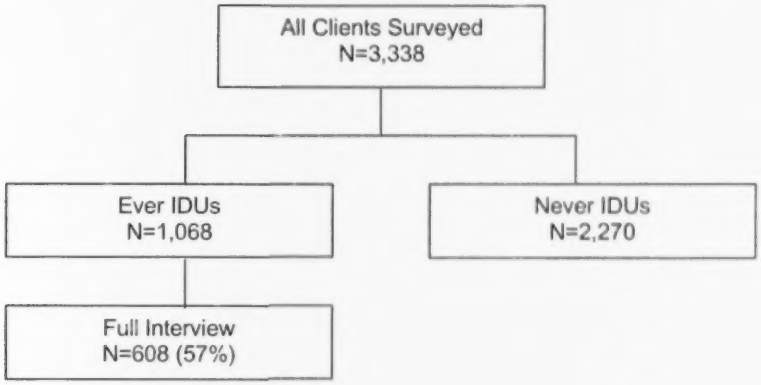
The presence of HIV infection was assessed by testing saliva samples for antibodies to HIV. After informed consent, a saliva sample was collected from study participants using the Saliva Sampler (SDS, Saliva Diagnostic Systems) saliva collection system. Each saliva sample was labeled with the participant's non-nominal Study ID code and forwarded to the Cadham Provincial Laboratory for HIV testing. The saliva specimens were screened for HIV 1/2 by ELISA (Detect-HIV kit, Biochem Immunosystems). Samples which were positive on the screening test were confirmed using the Western Blot technique (Cambridge Western Blot).

RESULTS

I. Client Survey

A total of 3,338 people were surveyed using the one-page Client Survey questionnaire, of which 1068 (32%) responded that they had ever injected drugs **(Figure 2).**

Figure 2: Breakdown of Study Sample Surveyed and Interviewed



Of those who had ever injected drugs ("ever-IDU") approximately equal numbers were men and women **(Table 1)**.

Table 1: Gender Distribution of Ever-IDU, from Client Survey

Gender	Number (%) of surveyed	Number (%) of ever-IDUs
Male	1500 (45.1)	535 (50.0)
Female	1800 (54.1)	521 (48.8)
Transgender	11 (0.3)	8 (0.7)
No gender recorded	27 (0.5)	4 (0.4)
Total	**3338 (100)**	**1068 (100)**

The average age of the ever-IDU was 33 years **(Table 2)**, with 25% being under 26 years of age.

Table 2: Age Distribution of Ever-IDU, from Client Survey

	Surveyed (n=3338)	Ever-IDUs (n=1068)
Age range (years)	11-96	14-82
Mean age	31.9	33.0
Median age	30	33

Sixty-four percent of ever-IDU reported being Aboriginal, 31% reported being White, 1% Black, 1% Asian, and 2% reported other ethnic backgrounds (**Table 3**).

Table 3: Self-Reported Ethnicity of Ever-IDU, from Client Survey

Self-reported Ethnicity	Number (%) of ever-IDUs)
White	336 (31.4)
Aboriginal	685 (64.2)
Black	13 (1.2)
Asian	11 (1.0)
Other	23 (2.2)
Total	**1068 (100)**

Most of the ever-IDU were current users, with 65% reporting injecting within the last 6 months, including almost 40% who had injected within the last week **(Table 4)**.

Table 4: Recency of Injection by Ever-IDU, from Client Survey

Last Time Injected Drugs	Number (%) of Ever-IDU
Within the last 24 hours	234 (22.1)
One to 7 days ago	175 (16.5)
One to 4 weeks ago	116 (11.0)
One to 6 months ago	156 (14.7)
Seven to 12 months ago	67 (6.3)
More than 1 year ago	309 (29.2)
Time of last injection not given	11
Total	**1068 (100)**

Cocaine was the drug most commonly injected, with 63% of ever-IDU stating that they use cocaine most frequently and 71% reporting that they use it at all **(Table 5)**. The Talwin/Ritalin mixture was a distant second in terms of frequency of use, followed by morphine, heroin, and several other drugs used by small numbers of IDU **(Table 5)**.

Table 5: Type of Drugs Injected by Ever-IDU, from Client Survey

Type of Drug	IDU Using Most Frequently	IDU Using to Some Extent
Cocaine	671 (63%)	760 (71%)
Talwin/Ritalin	168 (16%)	239 (22%)
Morphine	70 (7%)	140 (13%)
Heroin	51 (5%)	109 (10%)
Other Drugs*	N/A	98 (9%)

* Other drugs injected to any extent: Dilaudid 31 (2.9%); Speed 27 (2.5%); Demerol 16 (1.5%); Methadone (street) 11 (1.0%); Alcohol 4 (0.4%); LSD/acid 6 (0.6%); Codeine 3 (0.3%).

The sites of Client Survey administration and identification of ever-IDU by site category are summarized in **Table 6**. While the greatest number of Client Surveys were completed at community clinics or by public health agencies (75% of all surveys), equal proportions of the ever-IDU (37%) were identified by community clinics/public health and by street outreach/needle exchange programmes. A significant proportion of the identified ever-IDU (17%) self-referred to the study. The smallest proportion of ever-IDU (10%) were identified by addictions treatment agencies.

Table 6: Distribution of Client Surveys Completed and Ever-IDU Identified, by Study Site Category

Site Category	Surveys Completed	Number of Ever-IDU
Needle exchange/Outreach	429 (13%)	396 (37%)
Health Centres/Public Health	2513 (75%)	393 (37%)
Addictions Treatment Facility	219 (7%)	102 (10%)
Self-referred to Study	177 (5%)	177 (17%)

The area of residence of the surveyed ever-IDU, as indicated by the first three digits of their postal code, is summarized in **Table 7**. While the greatest concentration of identified ever-IDU live in the downtown core of Winnipeg, there were IDU identified who live in 30 different postal areas throughout the city.

Table 7: Postal Area of Residence of Ever-IDU, From Client Survey

Postal Area (first 3 digits of postal code)	Number of Ever-IDU (% of total)
R2W	395 (37.2)
R3C	132 (12.4)
R3B	116 (10.9)
R3G	72 (6.8)
R3E	43 (4.0)
R3L	37 (3.5)
R3A	28 (2.6)
R2X	28 (2.6)
R2K	23 (2.2)
R2H	21 (2.0)
R2L	19 (1.8)
R2V	16 (1.5)
R2M	15 (1.4)
R3M	15 (1.4)
R3T	10 (0.9)
Other Postal Areas	81 (7.6)
Postal Data Missing or Incorrect	17 (1.6)
Total	**1068 (100)**

II. In-Depth Interview

i. Demographic Characteristics of Interviewed Population

A total of 608 participants were referred to the study, met the study criteria and consented to be interviewed and provide a saliva sample for HIV testing. This study sample represents a proportion of 57% of the total number of ever-IDU identified in the Client Survey **(Figure 2)**. The interviewed sample was similar to all ever-IDU identified in terms of gender, age, ethnicity and drug most frequently used **(Table 8)**, and was composed of a slightly higher percentage of IDU who had injected within the last year (78% vs. 71%).

Table 8: Comparison of Characteristics of All Ever-IDU Identified in Client Survey with those Interviewed in Study

Characteristic	Ever IDUs (n=1,068)	IDUs Interviewed (n=608)
% Male	50.1	55.0
Mean age	33.0	33.3
% Caucasian	31.5	30.6
% Injected in last year	70.8	78.3
% Injected cocaine last year	62.8	59.6

Demographic characteristics of the interviewed sample are listed in **Tables 9 and 10.** Fifty-five percent of the sample were men, 44% women, and 0.7% identified as transgender. The women IDU were younger than the men, with a median age of 31 years, and 41% of the women were under age 30 **(Figure 3)**. The vast majority of all IDU interviewed were born in Canada. Approximately one quarter have lived elsewhere in Canada in the previous two years, and 17% have lived elsewhere (than Winnipeg) in Manitoba. Thirty-one percent reported their ethnic background as White/European, 66% as Aboriginal, and the remaining 3% as one of several groups, including Black/Afro/Caribbean, Latin American, or Asian. The male:female ratio was approximately 1:1 among the Aboriginal IDU, whereas among the other ethnic groups, the ratio was 2:1 or greater **(Figure 4)**. In terms of socioeconomic status, the Winnipeg IDU population was characterized by low education levels (approximately one-third had graduated from high school), low income, high unemployment, and unstable housing **(Tables 9 and 10)**.

Table 9: Demographic Characteristics of Interviewed IDU

Characteristic	%
Male, %	55.0
Age, median (range)	33 (16-61)
Male, median age (range)	34 (16-61)
Female, median age (range)	31 (16-56)
Born in Canada, %	97.4
Lived elsewhere in Canada (past 2 years), %	26.0
Lived elsewhere in Manitoba (past 2 years), %	17.0
Graduated High School, %	34.6
Self-reported Ethnicity, %	
Caucasian	30.6
Aboriginal	65.8
Other	3.6

Table 10: Income Sources and Housing Stability of Interviewed IDU

Most important source of income, %	
Regular employment	11.0
Casual/temporary employment	6.9
Gov't disability	4.6
Welfare/social assistance	43.2
Sex trade	11.8
Illegal sources	15.4
Partner/relative's income	4.8
Other sources	2.3
Housing	
Moved 2 or more times in 12 months, %	52.0

Figure 3: Age and Gender Distribution of Interviewed IDU

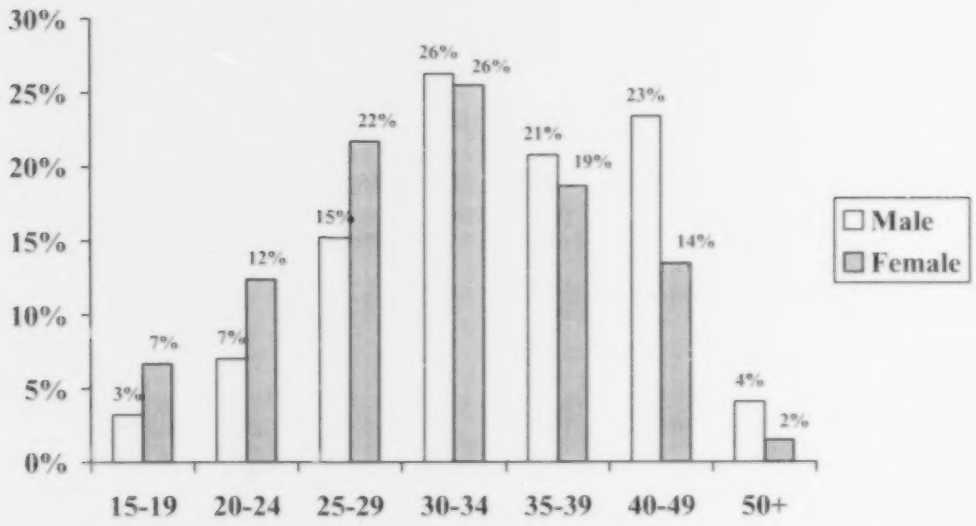
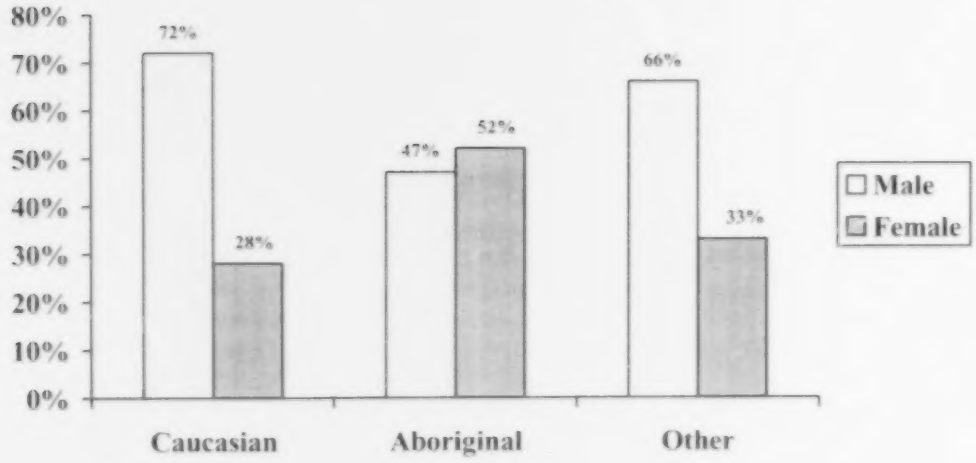


Figure 4: Gender Distribution, by Ethnicity, Interviewed IDU



ii. Drug Injection Characteristics of Interviewed Population

Table 11 lists some of the drug injection patterns of the interviewed IDU. As stated in the previous section, most are currently active IDU, with 78% having injected in the last year, 54% within the last month, and 39% within the last week. Cocaine is the predominant drug injected by the majority of IDU (60%), followed by talwin/ritalin (18%) and heroin (9%). The use of talwin/ritalin has declined in recent years, as indicated by the fact that twice as many people stated they have ever been a regular user of talwin/ritalin than those that stated they are currently regular users. Binge use of injection drugs (periods of very frequent injection) was reported by more than half of interviewed IDU, and cocaine was the drug used during binges by 78% of respondents.

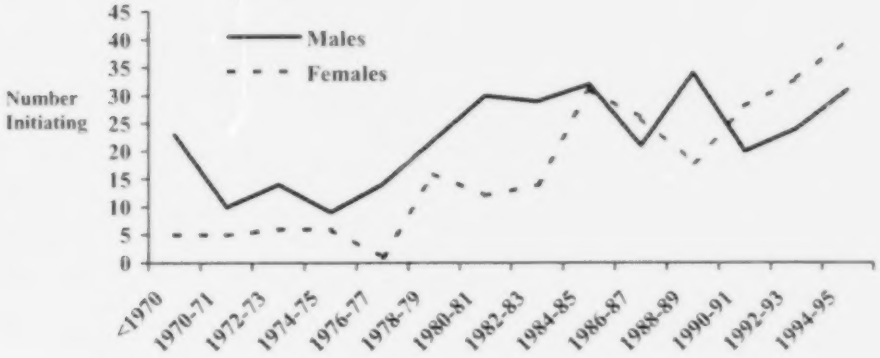
Overall, most of the IDU interviewed initiated drug injecting during the 1980's, with a median year of first injection of 1987 **(Table 11)**.

Table 11: Drug Injection Characteristics of Interviewed IDU

Characteristic	Value
Age at first IDU, Median	20
Injected within past week, %	38.7
Injected within past month, %	54.3
Drug Binges in the Past Year, %	53.1
Inject as Often or More Often than 1 year ago, %	37.8
Drugs of Choice	
Cocaine, %	59.6
Heroin, %	9.3
Talwin, Ritalin, %	17.6
Other, %	13.5
Ever a regular user of...	
Cocaine, %	60.7
Heroin, %	14.7
Talwin, Ritalin, %	35.2
Median Year of First Injection	1987

Significantly more men than women initiated injecting during the 1970's and early 1980's, whereas since the mid-1980's the number of women initiating has been approximately equal to the number of men **(Figure 5)**.

Figure 5: Year of Initiation of Injecting, By Gender, Interviewed IDU



Similarly, since the mid-1980's the number of self-identified Aboriginal people who initiated injecting has been significantly greater than non-Aboriginals, whereas the opposite was the case during the 1970's **(Figure 6)**.

Figure 6: Year of Initiation of Injecting, Aboriginal IDU Compared with Others

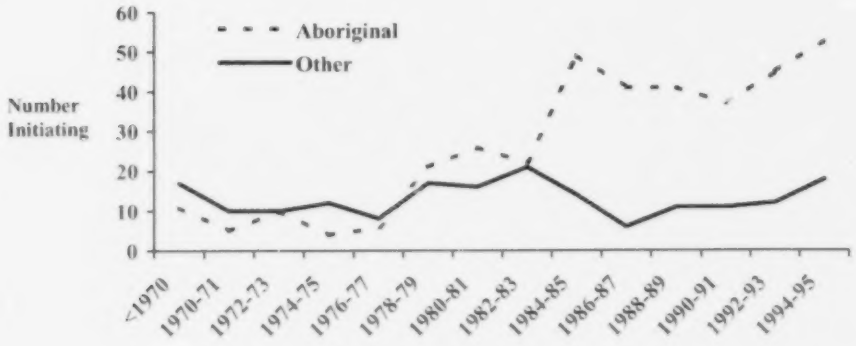


Table 12 summarizes responses to key questions about needle sources, needle sharing and harm reduction activities. Only 19% of those who injected within the last year stated that they always used a new "rig" (needle/syringe) when they injected. The remainder stated that they injected with a rig already used at least once by either themselves or others, including 48% who stated that they injected with a new rig "less than half the time" or "never". The most frequently used source of new rigs was pharmacies, followed closely by needle exchange programs. Almost 20% stated that they access new rigs through a secondary source, i.e. from their friends, a family member or their partner. Only 29% stated that they always have a supply of clean needles available whenever they obtain drugs to inject. Forty-two percent stated that they injected within the last year with a rig used by someone else, and 40% stated that within the last year, someone else had injected with a rig that they had already used. When asked for the reason they shared a rig, the most frequent response participants gave was "I did not have a clean rig on me", followed in frequency by "I knew/trusted the people I shared with" and "I was desperate for a shot". Of those who re-used someone else's used rigs, most (62%) stated they always attempt to clean them; however, water was used more often than bleach or bleach mixtures to clean rigs (56% vs. 35%).

When asked if they find it difficult to get new needles whenever they need them, 13% of participants said "Yes", and 18% of participants said "Sometimes". Reasons most commonly cited for these difficulties were: lack of money to buy needles, some pharmacies refusing to sell needles, needle exchange sites not being open when needles needed, and needle exchanges being located in sites inconvenient to them.

Table 12: Needle-Sharing and Harm Reduction Activities of Interviewed IDU

Activity	%
How often fixed with new rig in last year:	
Always	18.9
More than half the time	15.2
About half the time	17.5
Less than half the time	47.2
Never	0.8
Most frequent source of new rigs in last year:	
Pharmacy	40.1
Needle exchange	37.4
Friend/family/partner	18.6
How often have supply of new rigs prior to getting drugs:	
Always	28.9
More than half the time	31.6
About half the time	13.3
Less than half the time	11.8
Never	14.4
Injected with a used rig in the last year	42.4
Shared used rig with another in last year	40.4
How often cleaned used rig before using:	
Always	62.2
More than half the time	10.2
About half the time	2.7
Less than half the time	6.2
Never or unsure	18.6

iii. Sexual Risk Characteristics of Interviewed Population

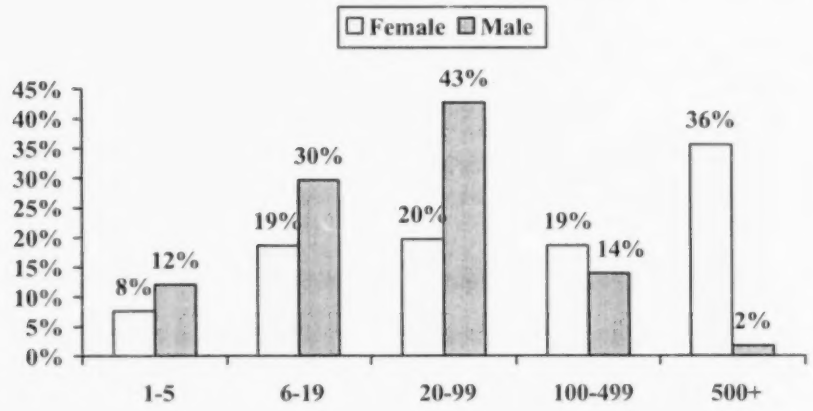
Sexual transmission of HIV and other bloodborne pathogens between IDU, and between IDU and their non-injecting sexual partners, is an important contributor to the propagation of these epidemics. Key sexual risk characteristics of the Winnipeg IDU interviewed in this study are summarized in **Table 13** and **Figures 7 to 11**.

Table 13: Sexual Risk Characteristics of Interviewed IDU

Characteristic	
Median age at first sexual intercourse	14 years (range 2 to 26 years)
Had regular sexual partner in last year	
Males (%)	67.5
Females (%)	83.9
Had casual sexual partner in last year	
Males (%)	56.1
Females (%)	36.7
Ever been paid for sex	
Males (%)	30.2
Females (%)	71.5
Males ever had sex with males (MSM) (%)	22.6

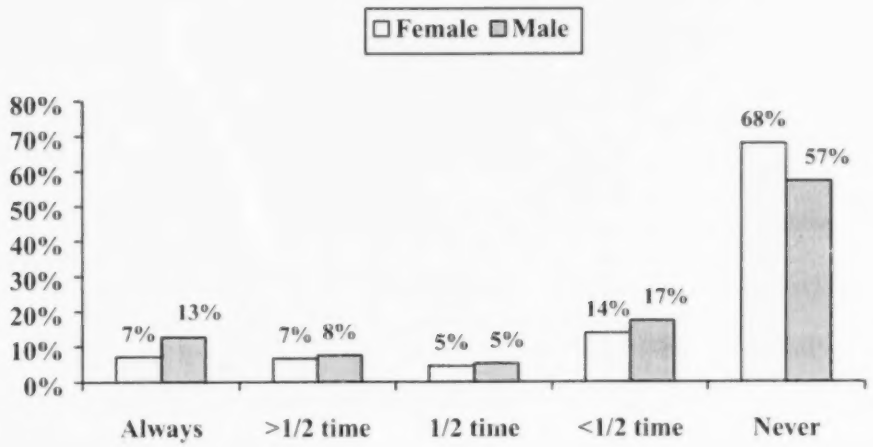
Previous studies have demonstrated that the three major modifiable sexual risk behaviours are: young age at first sexual intercourse; high numbers and rate of acquisition of new sexual partners; and non-use of condoms during penetrative sexual activity. This study found that the median age of first intercourse was 14 years in the studied population; this compares to general Canadian population estimates of approximately 16 years of age for first sexual intercourse.[17] For this study, we defined sexual partnerships of over 3 months duration as "regular partners" and non-sextrade partnerships of less than 3 months as "casual partners". More female than male IDU (84% vs. 68%) stated that they had a regular partner in the last year, whereas male IDU were more likely to say that they had casual sexual partners in the last year. Exchange of sex for money, drugs or other material goods was prevalent in the interviewed population, with over 70% of all female IDU and approximately 30% of male IDU stating that they had ever been paid for sex. The sex trade involvement of female IDU is reflected in the distribution of total lifetime opposite-sex partners **(Figure 7)**, with 36% of all female IDU stating that they had more than 500 lifetime partners.

Figure 7: Number of lifetime opposite sex partners, by gender



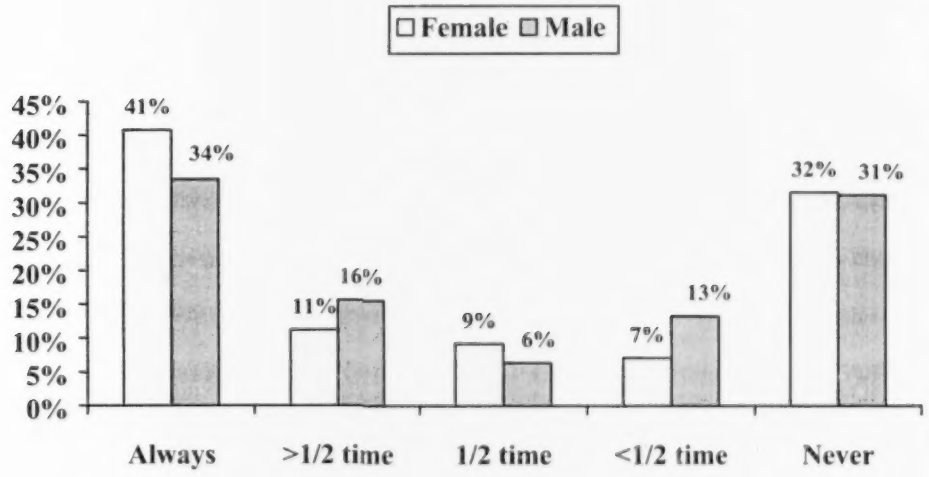
Reported condom usage by IDU with their regular partners was infrequent, with only 7% of women and 13% of men stating that they always used condoms in these partnerships, while nearly 70% of women and nearly 60% of men stated they never used condoms in their regular partnerships **(Figure 8)**.

Figure 8: Frequency of condom use during vaginal intercourse with regular partners of opposite sex, by gender.



Condom usage was more common in casual partnerships **(Figure 9)**, with about 50% of both male and female IDU stating that they use condoms "more than half the time" or "always" with casual partners. However, approximately 30% of both sexes stated that they never use condoms in these partnerships.

Figure 9: Frequency of condom use during intercourse with casual partners of opposite sex, by gender



Female IDU involved in sex trade work reported high condom usage rates with their clients, with over 90% reporting using condoms "always" or "more than half the time" **(Figure 10)**. Reported condom usage with male clients by male IDU was somewhat lower, with 70% stating they used condoms "always" or "more than half the time" with their clients, and 13% reporting never using condoms with their male sex clients **(Figure 11)**.

Figure 10: Frequency of condom use with sexual clients by women paid for sex

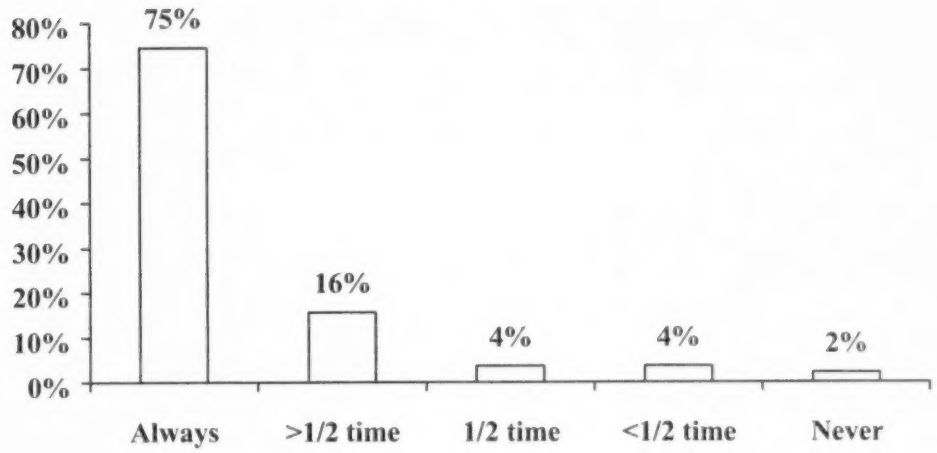
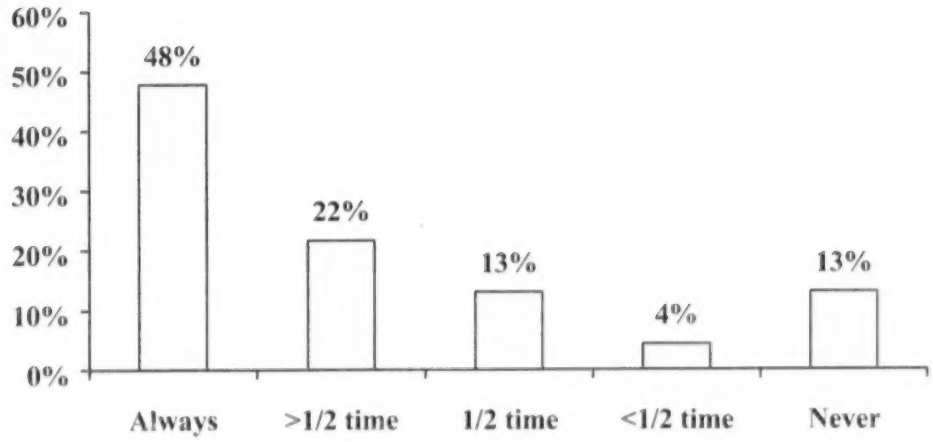


Figure 11: Frequency of condom use with sexual clients by men paid for sex by other men



iv. Use of Health Services by Interviewed Population

A high proportion of the IDU interviewed accessed some component of the medical care system on a regular basis, with nearly all visiting a doctor, nurse, health centre or clinic within the last 12 months, and over half getting some sort of medical attention at least once per month **(Table 14)**. Walk-in clinics and Emergency Rooms were the most frequently reported sources of medical attention, followed by family physicians and community clinics. Almost half of all IDU interviewed reported using an Emergency Room within the last 12 months, and almost one-third of those interviewed had spent more than 24 hours in hospital on at least one occasion in the last year. While 85% of those interviewed had ever obtained alcohol or drug addictions treatment, only 22% reported being currently under treatment. A high proportion of those interviewed reported having ever previously been tested for HIV (approximately 80%), whereas less than half had been tested for hepatitis C or hepatitis B.

Table 14: Use of Health Services by Interviewed IDU

Health Service	% of IDU Accessing
Medical attention in last 12 months (doctor, nurse, health centre or clinic)	98.2
Medical attention at least once/month	55.4
Visited Emergency Room in last 12 months	47.6
< 6 hour visit to ER	32.2
6-24 hour visit to ER	15.4
Admitted to hospital in last year (>24 hr)	31.4
Currently in addictions treatment	22.0
Ever in addictions treatment	85.6
Ever tested for hepatitis	68.5
Ever tested for hepatitis B	36.2
Ever tested for hepatitis C	44.7
Ever tested for HIV	79.6

positive on the saliva HIV antibody test **(Table 15)**

significantly higher among male (15.2%) than female (9.0%) IDU. There was no statistically significant difference in HIV prevalence by ethnicity.

Category	Prevalence (%)	
Total Prevalence (n=608)	12.6	10.2 – 15.6
By Gender:		
Males (n=336)	15.2*	11.5 – 19.5
Females (n=269)	9.0*	5.8 – 13.0
By Ethnicity:		
Caucasian (n=179)	12.3	8.0 – 18.2
Aboriginal (n=403)	13.4	10.2 – 17.5
Other (n=25)	4.0	0.2 – 22.3

*** p < .05**

There were significant differences between age groups, with the 25-29 year and 30-34 year age groups having the highest and second highest HIV infection prevalence rates, overall (**Figure 12**). The highest HIV prevalence (29%) was observed in the male 25-29 age group. HIV positivity was associated with younger age in females in comparison with males, with women in the 20-24 year age group having a higher prevalence than the men.

Figure 12: HIV Prevalence by Age Group and Gender

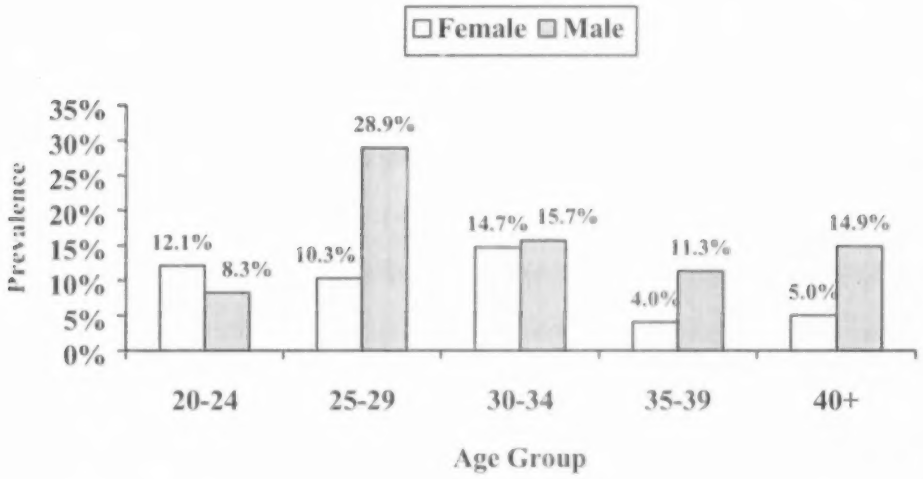


Table 16 summarizes those variables which were found to be associated with HIV

significantly associated.

Table 16: Factors Associated with HIV Positivity on Univariate Analysis

	Odds Ratio	95% C.I.	value
Age 25 – 29	3.1		.02
Age 30 – 34		0.9 – 6.1	.07
	1.9	1.1 – 3.1	
Ever Shared Rigs	2.1		.02
Injects Cocaine		1.2 – 4.2	.002
	1.8	0.9 – 3.4	
MSM (males)	6.2		<.001
Unstable Housing		0.9 – 2.5	.08

Ethnicity, education, mobility, age of first injection, duration of injecting, recency of injection, binge injection, group injection, prison injection, needle

Table 17 lists those variables which remained as significantly associated risk factors, when multiple other variables were controlled for in a multivariate model. Those factors found to be independently associated with (or predictive of) being HIV positive in the study included: being between 25 and 29 years of age; being male; having a history of sharing injection rigs/needles; injecting cocaine (as opposed to other drugs); being involved in sex trade; and among men, having sex with other men.

Table 17: Factors Associated with HIV Positivity on Multivariate Analysis

Variable	Odds Ratio	95% C.I.	Multivariate p value
Age 25 – 29	3.3	1.1 – 9.8	.03
Male Gender	2.4	1.3 – 4.5	.004
Ever Shared Rigs	2.7	1.3 – 5.5	.006
Injects Cocaine	2.2	1.2 – 4.2	.01
Sex Trade	3.0	1.3 – 6.7	.008
MSM (males)	5.1	2.5 – 10.7	.001

Multivariate model adjusted for: ethnicity, education, mobility, unstable housing, age of first injection, duration of injecting, recency of injection, binge injection, group injection, prison injection, needle exchange attendance, frequency of needle exchange use, addictions treatment.

CONCLUSIONS

The major findings of this cross-sectional survey of injection drug users in Winnipeg, Manitoba are as follows:

- The HIV infection prevalence among Winnipeg IDU has increased significantly over the last decade, from approximately 2.3% in the 1986-90 period, to approximately 12.6% in 1998.
- HIV infection prevalence was found to be higher in injection drug users who gave a history of ever sharing injection needles with someone else, in those who predominantly inject cocaine, and in those ever involved in the sex trade. The highest HIV positivity rates were found among male injection drug users, especially among those aged 25 to 29 years, and those who stated they had ever had sex with other men.
- Injection drug use has been well-established in Winnipeg for some time, with the median year of first injection being 1987. Cocaine is the drug injected by most users, with a decline in the use of Talwin/Ritalin in recent years. Heroin use is not currently prevalent in Winnipeg.
- Although the majority of injection drug users surveyed live in the core areas of Winnipeg, IDU in the study came from all areas of the city.
- There were nearly as many women IDU identified as men, in contrast to most population-based surveys of injection drug users, where a clear majority of IDU are men. The female IDU tended to be younger than the male IDU, and had initiated injecting more recently.
- A disproportionately high number of the surveyed IDU self-identified as Aboriginal (in comparison to the proportion of Aboriginal people living in Winnipeg). The male:female ratio among the Aboriginal IDU was approximately 1 to 1 compared to approximately a 2:1 ratio among non-Aboriginal IDU.
- In terms of socioeconomic determinants, the study found that overall, the Winnipeg IDU population is characterized by low education levels, low income, high unemployment, and unstable housing.

- Most IDU take steps to reduce the risk of HIV transmission during injection (e.g. 60% obtain new needles prior to obtaining drugs more than half the time). However, the study found a significant level of ongoing risky injection behaviour, including binge injection of drugs in the last year (53%), injecting with a needle used by someone else (42% in last year), and use of water alone rather than bleach mixtures to clean used needles (56% of those who clean used needles).
- IDU obtain new needles by purchasing them at pharmacies, accessing them free through needle exchange programs, or obtaining them from acquaintances. Approximately 30% of respondents cited difficulties in obtaining needles at least some of the time, due to lack of money to purchase, refusal by some pharmacies to sell needles to them, or needle exchange sites being inconveniently located or closed at times when needles were needed.
- There is ongoing risk of sexual transmission of HIV and other pathogens between IDU and their sexual partners, as reported condom usage during intercourse with regular sexual partners was very low (approximately 60% answered "never") and with casual partners was also low (approximately 30% answered "never"). Reported condom use with clients by female IDU involved in the sex trade was much higher (2% answered "never"). Male IDU paid for sex with other men reported variable condom use with clients (48% answered "always", 13% answered "never").
- Winnipeg IDU have frequent contact with the health care system, and most have been previously tested for HIV. However, most health care contacts are with walk-in clinics or hospital emergency rooms. While the majority of IDU have previously been referred for addictions treatment, only 22% reported being under treatment currently.

In summary, the documented increase in HIV prevalence in Winnipeg's injection drug using population, combined with evidence of ongoing risky injection and sexual practices, is cause for concern. Experience in other large cities has demonstrated that

once more than 10% of the drug-injecting population is infected with HIV, prevalence of infection may increase rapidly.[5,10]

The findings of this study have been shared with multiple stakeholders in this issue, including: the many health and social service agencies in Winnipeg providing services to injection drug users, public health officials at the regional, provincial and national levels, Aboriginal health leadership in Manitoba, and injection drug users themselves. The results of the study prompted the formation of the Winnipeg IDU Round Table, a forum for exchange and discussion of information and strategies for addressing the issue of HIV in injection drug users. Participants in the Round Table forum include representatives of many of the governmental and non-governmental agencies providing preventive, treatment and outreach services to IDU, as well as injection drug users themselves. Requests for further analysis of the study data have been submitted by various stakeholders, and proposals for more in-depth study of certain aspects of the IDU/HIV issue have been submitted to funders.

Based on the findings of this study, it is recommended that coordinated, comprehensive, multi-sectoral strategies be developed and implemented to prevent further extensive transmission of HIV and other bloodborne pathogens among IDU and their sexual partners in Winnipeg and the rest of Manitoba. These strategies should include culturally-appropriate policies and programs to prevent and treat injection drug addiction *and* reduce harmful health consequences among those who are unable or not ready to abstain from drug use. Such strategies have been developed by other communities facing the same issues, and much can be learned from those experiences.[5,11-16] Minimum components of comprehensive strategies should include:

- Accessible addictions treatment and support for users at various stages of readiness for treatment;
- Education, counselling and support to reduce the harms of drug use, with effective outreach programs to access marginalized drug users;
- Access to adequate supplies of sterile injection equipment and condoms at locations and times convenient to users;
- Access to comprehensive mental health and medical care for injection drug users, including testing and treatment for blood-borne infections such as HIV and hepatitis C; and
- Healthy public policy to address some of the social and environmental determinants which may predispose to injection drug use and its consequences, including poverty, inadequate housing, and restricted opportunities for education, employment and recreation.

Various programs and services for injection drug users are currently in place in Winnipeg and the rest of Manitoba, and it is recommended that these be evaluated and modified or expanded if necessary to meet the above objectives and the changing needs of the at-risk populations.

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APPENDIX I – LIST OF REFERRAL SITES

THE WIDE STUDY REFERRAL SITES

Addictions Foundation of Manitoba (AFM)

Aboriginal Health & Wellness Centre

City of Winnipeg STD Team

Health Action Centre (HAC)

Health Sciences Centre: Chemical Withdrawal Unit

Health Sciences Centre: Infectious Diseases Clinic

Health Sciences Centre: General

Hope Centre Community Health Centre

Klinic Community Health Centre

Manitoba Youth Centre (MYC)

Mount Carmel Clinic

Native Addictions Council of Manitoba (NACM)

Nor'West Clinic

Private Physicians

St. Boniface General Hospital: Infectious Diseases Clinic

Street Connections: 50 Argyle

Street Connections: 820 Main Street

Street Connections: Van

Street Outreach Collective

"Unbased" (Self-Referred)

Village Clinic

Winnipeg Region Community Health

Winnipeg Region STD Team